No. 9300259

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Drs. Jred C. and Nancy A. Elliott

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TRITICALE

'Norico'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirty-first day of August in the year of our Lord one thousand nine hundred and ninety-five.*

Attest:

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and edition date on all reproductions.* **OMB APPROVED NO. 0581-0055**

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(INSTRUCTIONS ON REVERSE)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)
Drs Fred C. and Nancy A. Elliott

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
BL 53-6

3. VARIETY NAME
NORICO

4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP)
1084 Angus Way, Yuma AZ 85364 (Oct-March)
Box 233, Ottertail, MN, 56571 (Apr.-Sept)

5. PHONE (include area code)
(602)-782-3979
(218)-367-2389

FOR OFFICIAL USE ONLY

PVPO NUMBER
9300259

FILING
Date: Sept. 16, 1993
Time: 3:50 ☐ A.M. ☑ P.M.

FEES RECEIVED
Filing and Examination Fee: $ 2,325.00
Date: 9/16/93
Certificate Fee: $ 275.00 & 25.00
Date: 06/29/95 & 07/14/95

6. GENUS AND SPECIES NAME
Triticosecale Wittmack

7. FAMILY NAME *(Botanical)*
Gramineae

8. CROP KIND NAME *(Common Name)*
Spring Triticale

9. DATE OF DETERMINATION
March, 1992

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

PHONE (include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow* **INSTRUCTIONS** *on reverse)*

- a. ☑ Exhibit A, Origin and Breeding History of the Variety
- b. ☑ Exhibit B, Novelty Statement
- c. ☑ Exhibit C, Objective Description of Variety
- d. ☑ Exhibit D, Additional Description of Variety
- e. ☑ Exhibit E, Statement of the Basis of Applicant's Ownership
- f. ☑ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 9-13-93
- g. ☑ Filing and Examination Fee ($2,325) made payable to "Treasurer of the United States"

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act)* ☐ YES *(If "YES," answer items 16 and 17 below)* ☑ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____).
☑ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☑ YES (If "YES," GIVE NAMES OF COUNTRIES AND DATES) USA - 1993 as an unnamed component in forage mix
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE
Fred C Elliott	Plant Breeder	9-13-93
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE
Nancy A Elliott	Assoc. Plant Breeder	9-13-93

SD-470 (06-93) *Editions of Forms LS-470 (3/86) and CSSD-470 (5/89) are to be destroyed.*

CONTINUED ON REVERSE

Exhibit A. Origin and Breeding History of Norico Triticale

The variety Norico was produced by the pedigree system of breeding. The cross leading to the development of Norico was made by Dr. Frank J. Zillinsky in 1979: Beagle x Lince. Segregating generations were grown by Dr. Zillinksy in his disease screeing nursery at Patzcuaro, Mexico.

In the winter of 1982-3 Dr. Zillinsky gave us selection BL 53 from this cross along with some other materials for our triticale program. BL 53 was grown in the summer of 1983 by us in Perham, MN and in the winter of 1983-4 at the University of Arizona Valley Experiment Station in Yuma, AZ, for trypsin inhibitor assays.

From 1985 to 1988 lines of BL 53 were grown in two generations per year in Yuma AZ and in Ottertail MN for seed quality improvement. Harvested seed was screened using a saturated salt brine solution.

High quality dense seed selected by the brine treatment method was grown out in Yuma, 1989 in spaced populations. Single plant selections were made. The selection BL 53-6 was identified as a superior plant in terms of rapid growth, mature height, seed yield, and seed quality.

Seed of BL 53-6 was grown along with the other selections in drill strips in MN 89, Y 90, MN 90, Y 91, MN 91, and Y92. In 1992 the line BL 53-6 was determined to be stable and uniform, and the name "Norico" was given.

Exhibit B. Novelty Statement.

Norico is a tall spring triticale with long, slender stems, leaves, and spikes. It is characterized by rapid early growth.

Norico most closely resembles Companion. It differs from Companion in that it is taller and more willowy. At Ottertail, MN in 1993 Norico attained a mature height of 130 cm., whereas Companion attained 122.

At the ripe stage Norico heads are more nodding than Companion. There is a tendency for the entire stem to arch rather than to bend at the neck.

FORM GR-470-33
(8/75)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
~~GRAIN DIVISION~~
~~HYATTSVILLE, MARYLAND 20782~~

EXHIBIT C
(Triticale)

OBJECTIVE DESCRIPTION OF VARIETY
TRITICALE

NAME OF APPLICANT(S)	VARIETY NAME OR TEMPORARY DESIGNATION
Drs Fred C. and Nancy A. Elliott	Norico (BL 53-6)
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)	FOR OFFICIAL USE ONLY
1084 Angus Way, YUMA AZ 85364 (Oct-March)	PVPO NUMBER 9300259
Box 233, Ottertail MN, 56571 (Apr.-Sept)	

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = INTERMEDIATE 3 = WINTER

[3] Juvenile Plant Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

[1] Photoperiod: 1 = INSENSITIVE 2 = SENSITIVE

2. PLOIDY:

[1] 1 = HEXAPLOID 2 = OCTOPLOID 3 = OTHER (Specify)_____

[4][2] 2n CHROMOSOME NUMBER

3. MATURITY (50% Flowering):

[3] 1 = VERY EARLY 2 = EARLY 3 = MIDSEASON 4 = LATE 5 = VERY LATE

[1][0] DAYS EARLIER THAN . . . . . [2] 1 = CARMACK 2 = ROSNER 3 = PATHFINDER

[1][4] DAYS LATER THAN . . . . . [5] 4 = 6TA 204 5 = ARMADILLA

4. HEIGHT:

[1][3][0] CM. HIGH [5] 1 = DWARF 2 = SEMIDWARF 3 = SHORT 4 = MIDTALL 5 = TALL

[0][0] CM. SHORTER THAN . . . . . [0] 1 = CARMACK 2 = ROSNER 3 = PATHFINDER

[4][4] CM. TALLER THAN . . . . . [2] 4 = 6TA 204 5 = ARAMADILLA

5. PLANT COLOR AT BOOT STAGE:

[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

6. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[3] Neck Hairiness: 1 = NONE 2 = SLIGHT 3 = MODERATE 4 = HEAVY

[1] Shape Of Neck: 1 = STRAIGHT 2 = WAVY 3 = OTHER (Specify)_____

7. LEAVES:

[2] Flag Leaf: 1 = NOT TWISTED 2 = TWISTED

[3][3] CM. LEAF LENGTH: 1st Leaf Below Flag Leaf

[1] Waxy Bloom On Leaf At Boot: 1 = ABSENT 2 = PRESENT

[1][4] MM. LEAF WIDTH: 1st Leaf Below Flag Leaf

[3] Leaf Carriage: 1 = UPRIGHT 2 = RECURVED 3 = DROOPING

[1] Auricle Color: 1 = COLORLESS OR WHITE 2 = PURPLE 3 = OTHER (Specify)_____

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8. HEAD:

[1] Density: 1 = LAX 2 = MIDDENSE 3 = DENSE

[2] Shape: 1 = FUSIFORM 2 = OBLONG 3 = CLAVATE 4 = ELLIPTICAL 5 = OTHER (Specify)_____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETTED 3 = AWNLETTED 4 = AWNED

[3] Awn Color: 1 = WHITE 2 = YELLOW 3 = TAN 4 = BROWN 5 = BLACK

[1][3] CM. HEAD LENGTH [0][9] MM. HEAD WIDTH

9. GLUMES AT MATURITY:

[2] Pubescence: 1 = GLABROUS 2 = SLIGHTLY PUBESCENT 3 = PUBESCENT

[3] Color: 1 = WHITE 2 = YELLOW 3 = TAN 4 = BROWN 5 = BLACK

[3] Length: 1 = SHORT 2 = MIDLONG 3 = LONG [1] Width: 1 = NARROW 2 = MIDWIDE 3 = WIDE

[2] Shoulder: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE [3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

10. COLEOPTILE COLOR:

[3] 1 = WHITE 2 = GREEN 3 = PURPLE

11. SEED:

[2] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Smoothness: 1 = SMOOTH 2 = SLIGHTLY WRINKLED 3 = WRINKLED

[2] Brush Area: 1 = SMALL 2 = MIDSIZE 3 = LARGE

[2] Brush Length: 1 = SHORT 2 = MIDLONG 3 = LONG

[4] Phenol Reaction: 1 = IVORY 2 = FAWN 3 = LIGHT BROWN 4 = BROWN 5 = BROWN BLACK

[6] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = BLACK 6 = OTHER (Specify) tan

[6][6] GMS. PER 1,000 SEED

12. DISEASE (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Tolerant):

[0] STEM RUST (Races)_____ [0] LEAF RUST (Races)_____

[0] STRIPE RUST (Race)_____ [2] ERGOT

[0] POWDERY MILDEW_____ [0] BACTERIAL STRIPE

[2] SEPTORIA [0] YELLOW DWARF

[ ] OTHER (Specify)_____ [0] OTHER (Specify)_____

13. *INSECT (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Tolerant):*

[0] GREENBUG

[0] CEREAL LEAF BEETLE

[0] OTHER (Specify)_____

HESSIAN FLY RACE:

[0] GP [0] A [0] B [0] C

[0] D [0] E [0] F [0] G

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14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	VARIETY
PLANT TILLERING	Companion
WINTER HARDINESS	—
AREA OF ADAPTATION	Plains, Companion (Great Plains)
SEED SHAPE	Companion

REFERENCES:

L. W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, USDA.

W. E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, Contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts.

COMMENTS:

Exhibit D. Additional Description of Norico.

Norico is a tall spring triticale characterized by rapid early growth and long, willowy stems and leaves.

After seeding on April 30, 1993 at Ottertail MN, 50% heading occurred at 71 days, one day earlier than Companion, but 8 days earlier than Frank and Banjo, 10 days earlier than Rosner and 6TA 204. Norico headed 14 days later than Armadillo. Ripening occurred at approximately 100 days.

At Ottertail MN, 1993, Norico had a mature height of 130 cm, 8 cm taller than Companion, 13 cm taller than Plains, 42 cm taller thank Frank, Banjo, and 6TA 204, and 44 cm taller than Rosner.

Stems of Norico, as with Companion, are hollow and lacking in anthocyanin. Norico stems average slightly less in diameter at level of flag leaf (Norico = 2.28 mm, Companion = 2.50 mm) and at lowest leaf (N = 2.78, C = 3.64mm). There is a short patch, 2 to 5 cm of moderate hairiness at the neck. Norico leaves average slightly longer than Companion (N = 33 cm, C = 32 cm) and slightly narrower (N = 14 mm, C = 15 mm).

The Norico coleoptile has a purple anthocyanin streak extending vertically and continuing, turning pinkish, into the seedling, much as with Companion.

Norico spikes are oblong but taper slightly more toward the apex than Companion spikes. There are 12 to 14 spikelets. Spike length averages 13 cm, the same as Companion, but spikes are slightly narrower (N = 9 mm, C = 10 mm) at widest point.

Norico glumes are the same length and width as Companion glumes. As with Companion there is a slight pubescence visible only under magnification along the margins of the glumes and lemma. The beak is short (2 mm), and acuminate as with Companion, and shoulders are oblique. At flowering there is a margin of anthocyanin along the edge of the shoulder of the glume and up to the beak, but this color fades at maturity. Anther color is cream.

Awns of Norico are tan and persistent, very much like awns of Companion. Awns are about 8 cm long and slightly shorter at apex and base of spike.

Seed of Norico is more nearly oval than ovate, having its widest diameter nearer the midpoint. Length of kernel is 1.0 cm; width is 3.4 mm. Brush area and length are medium, as with Companion. Seed color is slightly darker than Companion, about the same as

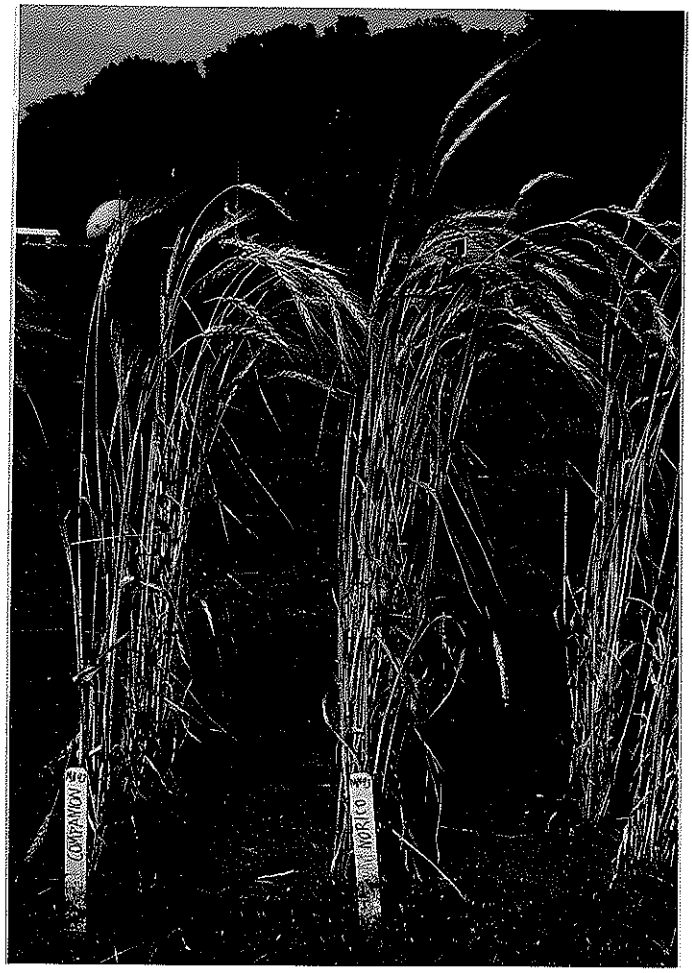
Plains. Seed is smooth and crease is narrow, with cheeks more likely to be angular, as with Plains, than rounded, as with Companion. Seed weight per 1,000 kernels is 66g. The phenol reaction color is brown, like Plains, and slightly darker and more reddish than Companion.

Norico is resistant to septoria and ergot. It also has field resistance to stem and leaf rusts commonly occurring in the Great Plains.

The overall appearance of Norico at the ripe stage is noticeably more willowy and nodding than stands of Companion or Plains. Stems of Norico tend to bend more fully along their entire length and appear to arch rather than to bend at the neck sharply. This feature does not, however, lead to problems with lodging in our experience.

Exhibit D.

Norico and Plains
At Heading



Companion and Norico
At Late Maturity

Exhibit D.

Stands of Norico and Companion Showing Stem Bending in Norico

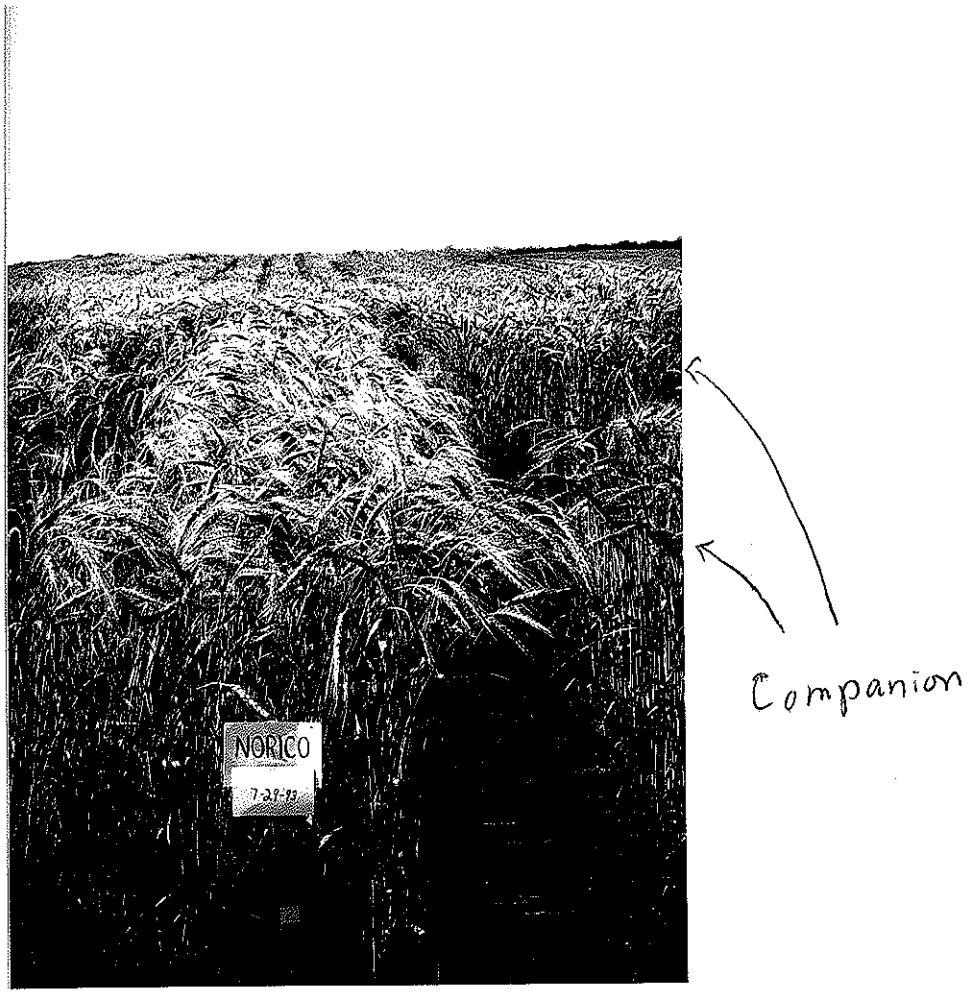
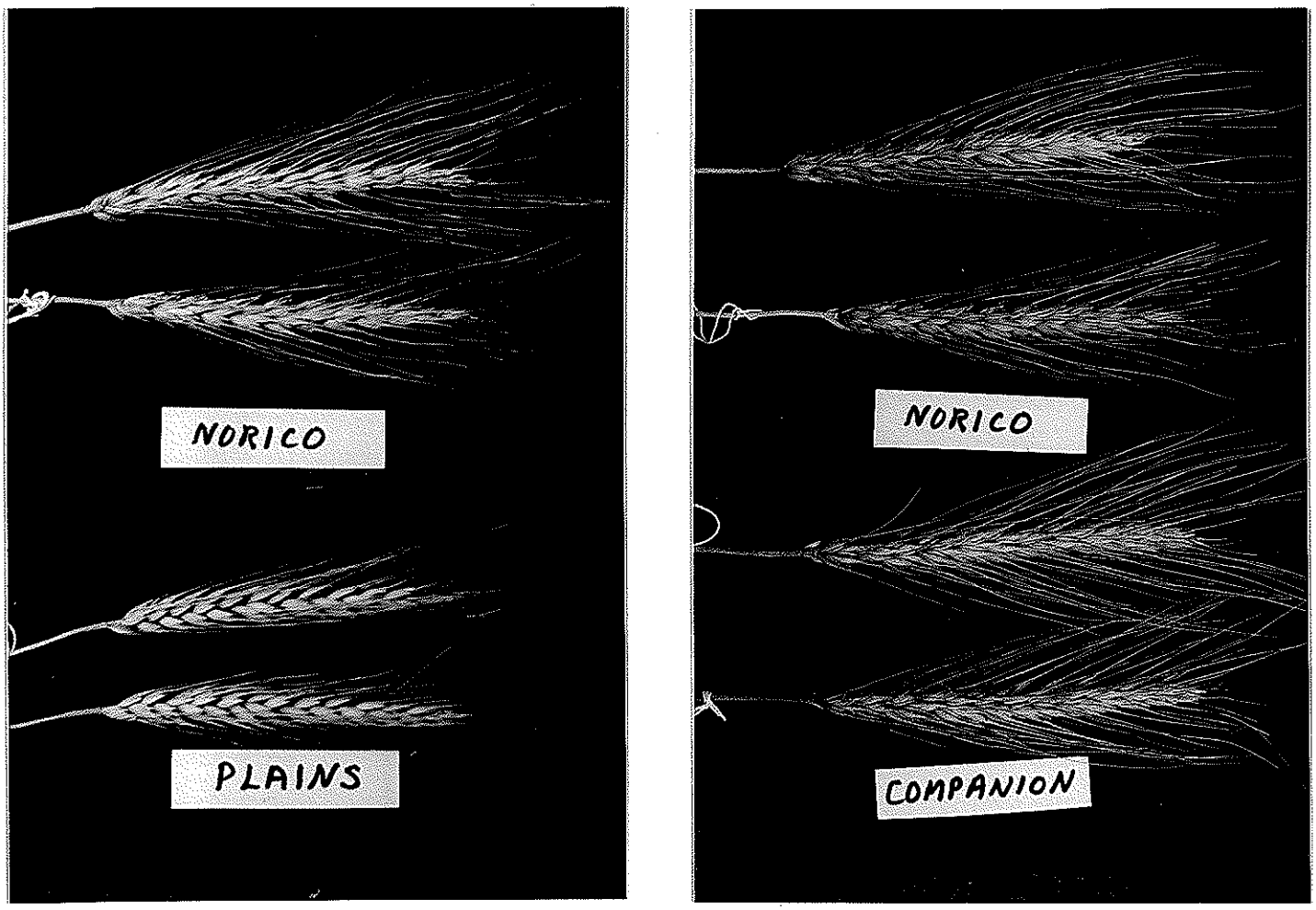
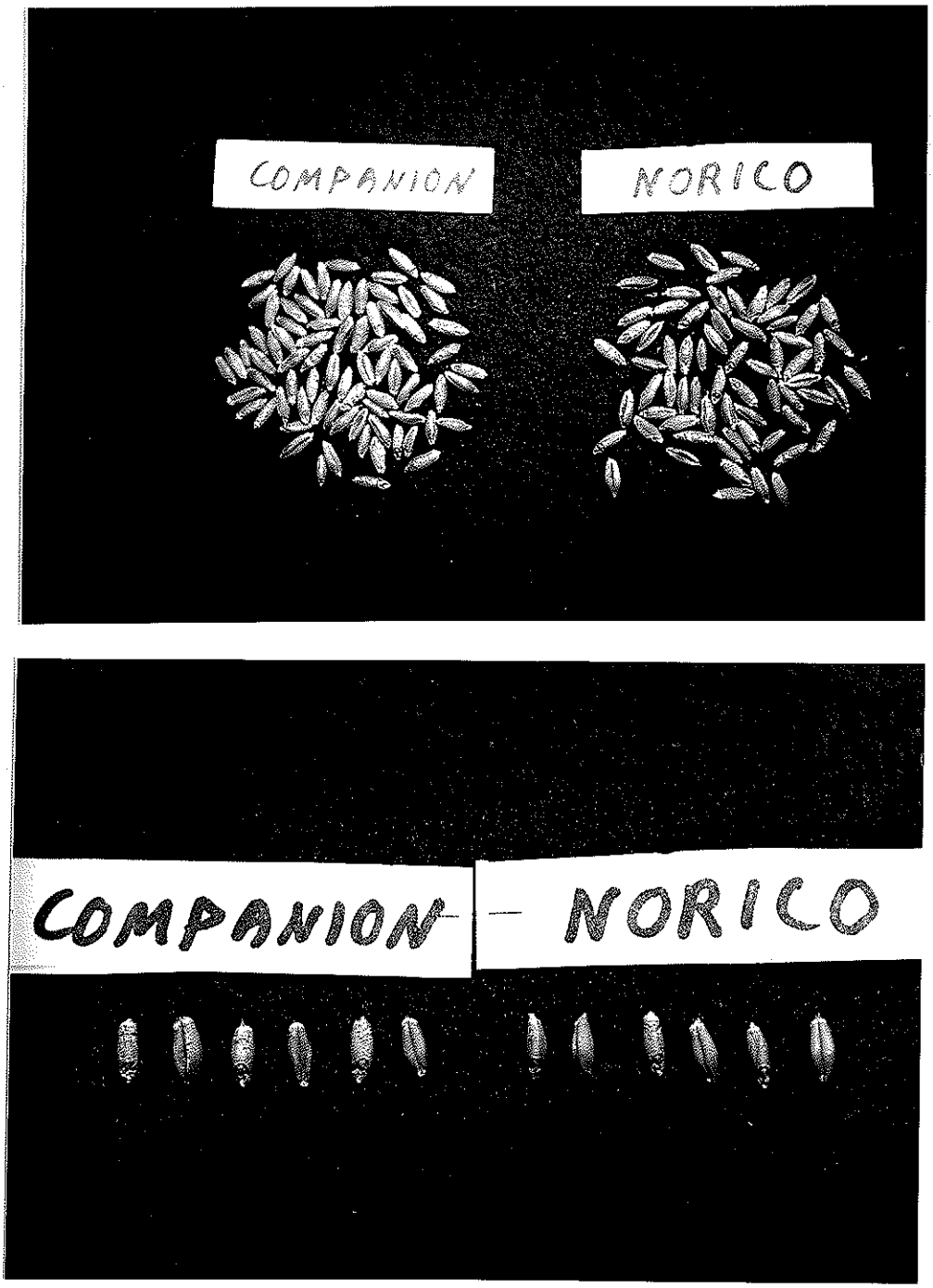


Exhibit D.



Spikes of Norico, Companion, and Plains

Exhibit D.



Seed Comparison of Norico and Companion

Exhibit E. Ownership Statement.

The variety Norico for which Plant Varietal Protection is sought arose from a cross made by Dr. Frank J. Zillinsky,* from which later generation selections were made by Dr. Fred C. Elliott of Elliott Plant Breeding. By agreement between Drs. Zillinsky and Elliott all rights to ownership of the line BL 53-6, Norico are retained by Fred C. and Nancy A. Elliott.

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* Dr. Frank J. Zillinsky, 1384 McMahon Ave, Gloucester, Ontario, K1T IC2, Canada. Phone: 613-523-2598.